# Flooring's Dirty Climate Secret

## Five Reasons to Reject Vinyl Flooring



Have you heard of “luxury vinyl tile”? “Luxury vinyl tiling” is just PVC flooring under a new name. PVC flooring is everywhere in homes and commercial spaces, but despite its low cost and slick marketing, it harbors a dirty secret--**manufacturing this flooring releases enormous quantities of carbon dioxide and other climate warming gasses into the air and it also requires the use of highly-toxic substances.**

**Vinyl flooring is made of polyvinyl chloride (PVC)—one of the worst types of plastic from an environmental and human health perspective.**

- Most plastics are made from fossil fuels, but PVC is one of the worst types of plastic because manufacturing PVC releases large quantities of climate-warming greenhouse gasses and its production uses highly-toxic mercury, per- and polyfluoroalkyl substances (PFAS), and asbestos.
- PVC has been called the “poison plastic” because asbestos is used to produce chlorine that is then used to make PVC flooring. Almost every industrial use of asbestos is outlawed in the United States because asbestos can cause cancer. The chlor-alkali industry that makes chlorine - almost all of which is entirely destined for PVC production - represents the last legally permitted industrial use of asbestos in the United States*.

**Manufacturers have vastly underestimated PVC flooring’s carbon footprint.**

- Our research found that the industry’s standard Environmental Product Declarations (EPDs) (RFCI, 2019) undercount the estimated carbon dioxide equivalent emissions from the production of vinyl tile flooring sold in the U.S. market by 27%, for floors with PVC resins made in the U.S., and 171%, for floors with resins made in China.
- For vinyl sheet flooring, manufacturer EPDs underestimate carbon dioxide equivalent emissions by 8% for floors with PVC resins made in the U.S., and 180%, for floors with resins made in China (Appendix A, CEH 2022).

**Manufacturing PVC flooring uses highly-toxic substances such as asbestos, mercury, and/or PFAS; these toxics are known and probable human carcinogens, and reproductive and developmental toxicants.**

- Mercury and PFAS chemical releases from PVC manufacturing facilities are distributed worldwide, contaminating ecosystems, persisting in the environment for generations, and accumulating in the bodies of humans and wildlife. PFAS are a class of more than 12,000 synthetic chemicals commonly called “Forever Chemicals” because they do not degrade over time and are associated with a wide range of adverse human health outcomes.
- Manufacturing PVC also releases other potent toxic chemicals including known and probable carcinogens like vinyl chloride and ethylene dichloride. In addition, in certain manufacturing processes, ozone depleting chemicals are also released as emissions from PVC facilities.

*In April 2022, EPA announced a draft rule that would prohibit chlor-alkali manufacturers from using asbestos. While this announcement is a positive move towards eliminating the last remaining industrial use of asbestos in the US, it is likely that chlor-alkali producers will substitute PFAS-coated membranes for asbestos filters. The regrettable substitution of PFAS for asbestos should be explicitly banned in EPA’s rulemaking.

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**Reliance on PVC flooring inflicts unjust burdens on communities living near production facilities in the U.S., China, and across the globe.**



- The price of vinyl flooring is artificially low because the human and environmental health costs of producing this flooring are not being factored into the price.
- In the U.S., the plastics industry - including PVC manufacturers - is concentrated in a handful of predominantly low-income communities and communities of color, perpetuating environmental racism and injustice by exposing these communities to toxic industrial pollution.
- Across the globe, the PVC supply chain implicates raw material exports of asbestos, mercury, and other toxic inputs that endanger front and fenceline communities across the globe.

**There is no safe way to dispose of PVC.**

- Very little PVC is actually recycled. It is technically difficult and can contain harmful legacy contaminants that are then reintroduced into the new products. Even companies that claim they recycle their PVC floors are still using a majority of virgin PVC. Moreover, some vinyl flooring companies banned the use of recycled PVC in products because of the presence of legacy toxics such as phthalates and lead.
- Most vinyl flooring ends up in landfills and releases toxic chemicals, which contaminate groundwater and the surrounding environment.
- Incinerating or combusting PVC as a mode of disposal leads to the release of dioxins and furans, potent carcinogens.

### Safer Alternatives are Available

There is simply no reason to choose carbon and chemically intensive vinyl flooring when there are safer and healthier alternatives, including some biobased alternatives such as linoleum (made from linseed oil) or ceramic tile.



**Read the full report**
**ceh.org/flooringreport**

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